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Lithotomy for Calculus-
Pyelitis.

BY ✓

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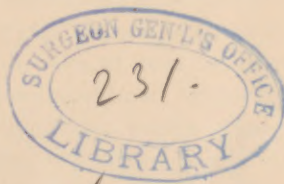
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TROY, N. Y.

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A SUCCESSFUL CASE OF NEPHRO-LITHOTOMY FOR CALCULUS-PYELITIS.

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Read by Title, November 18, 1884.

I REPORT this case on account of the comparatively few instances on record of pure nephrotomy, and in order to contribute my mite to the extension of the field of renal surgery, which is daily assuming more and more importance in practice. It seems very strange that an operation which was so strongly urged in 1622 by Cousinot, of France, should be nearly two hundred and fifty years in gaining recognition as a proper and valuable addition to surgery. Cousinot, in his thesis in 1622, considered the operation a very proper one. Borden advanced the same view in 1754; but Masqualier, the same year, rejected it. Rayer admitted nephrotomy as a proper operation in 1839; but the operation, save in cases of previous perinephritic abscess or fistula, was forgotten until 1869, in which year Thomas Smith read a paper before the Medico-Chirurgical Society of London, advocating the operation.¹ The next year, Gunn, of Chicago, and Durham and Bryant, of London, operated. The two former did not incise the kidney, and their operations accordingly remained incomplete. In Bryant's case, the patient lived twenty-two days. This was the revival of the operation, which is even now so infrequent that each case is of great interest.

My patient, E. C. R., a carpenter and pattern-maker, aged fifty-two years, formerly of irregular habits, while a soldier in the late war had malarial fever, several attacks of renal colic, and was discharged for diabetes. At various times, up to 1880, he had

¹ Dictionnaire de Médecine et de Chirurgie. Paris, 1881, vol. xxx, p. 664. P. Marduel. Article "Reins."

attacks of gravel ; and finally, in that year, he had an attack followed by the sudden lodgment of a calculus in the membranous portion of the urethra. Being in his agony unable to procure assistance, he himself, with a pincers applied to the soft parts external to the stone, crushed it so that it could be passed. This was followed by hemorrhage and inflammation. Of the size and weight of the stone, I could get no definite idea. In the August following, he consulted me for difficult micturition and very offensive purulent urine. An examination revealed a stricture in the membranous portion of the urethra, through which I finally succeeded, by packing, in passing a whalebone guide, upon which I introduced a tunneled sound into the bladder. Subsequently I gradually dilated the urethra to No. 24 (French), and with washing out the bladder the urine cleared up and all trouble disappeared for a long time. Gradually the old trouble recurred, and the urine, on standing in a glass preserve-jar, deposited a sediment of pus two inches in depth, and so offensive as to drive every one out of the room where it was exposed. In July, 1883, I performed internal urethrotomy, passed No. 30 (French) and had the bladder washed out as before. A month later he had, while under my care, a severe attack of renal colic, and passed a calculus about the size of a split pea. Soon after, both the patient and myself noticed a fullness in the left flank, which, on examination, was found tender, elastic, and fluctuating. My diagnosis was pyelonephritis from calculus, and I advised incision and drainage of the kidney, with, if necessary, subsequent extirpation of the organ. The patient declined any surgical treatment and hoped to get better. Instead of improving, however, he gradually became worse, the pain becoming so severe as to confine him most of the time to his bed, and the tumor enlarged to about the size of two fists. Early in August, 1884, he desired me to operate for his relief. August 10th, I carefully examined the patient and found the tumor to be about the size stated, fluctuating, elastic, and exquisitely tender. Firm pressure caused pain down the left ureter, extending to the left testicle and down the inside of the left thigh. Subsequent to the examination, the first urine, passed in a quart-glass preserve-jar, deposited, on settling, about two inches of offensive pus, and on it a layer of red blood-corpuscles one quarter of an inch thick. The urine was alkaline, the specific

gravity 1.015, and albumen, after separating the pus by filtration, was found in considerable quantity. Examination of the sediment showed only pus and red corpuscles, with some triple-phosphate crystals. I operated August 11th, at 1 p. m. The patient was on the right side, with a hair-pillow under the flank. Brandy was given by the mouth and etherization was proceeded with. The patient was a difficult subject to etherize. An incision five inches in length was made along the edge of the quadratus lumborum muscle, and, in order to gain more room, another incision was made in front, parallel to the crest of the ilium and about two inches long. With knife and director, the dissection was carried down to the fatty tissue surrounding the kidney. Through this I tore with the finger-nails and the knife-handle. Owing to contraction of the abdominal muscles, I had great difficulty in pushing the kidney well into the wound, but I finally succeeded, and I introduced a needle grasped by forceps into the kidney, to search for a calculus, the kidney being apparently normal. Not succeeding with this, I tried the smallest needle of a Codman and Shurtleff aspirator, and, thrusting this through the parenchyma toward the renal pelvis, I felt the grating of a calculus. At the same time, there welled through the needle some excessively offensive pus. With the needle as a guide, I passed a curved bistoury into the kidney, through the parenchyma, and made an incision admitting the index-finger. This incision I enlarged by tearing, so as to admit two fingers, giving exit to ten or twelve ounces of offensive pus. The hemorrhage was brisk but was arrested by sponges. In the pelvis of the kidney could now be felt a calculus stopping the ureter. This I attempted to remove with forceps, but it broke at every grasp of the instrument. Finally, it was dislodged, as a mass of calculous fragments, by the finger-nail used as a scoop. This *débris*, when dried, weighed thirty-eight grains. The kidney was then syringed out with a solution of chlorinated soda, 1-20. The wound was thoroughly sponged, and a rubber drainage-tube of three-eighth-inch lumen was introduced into the kidney. The angular prolongation of the wound was closed with a continuous suture of Kocher's catgut, iodoform was dusted into the cavity, and the main wound was closed with three silk sutures. Iodoform was dusted over the wound, and a thick pad of absorbent cotton was placed over all. Owing to the free discharge of urine and pus,

it was necessary to change the dressings every four hours at first, and at each dressing the wound and tube were washed out with a warm solution of chlorinated soda, 1-20. For ten days, one or two grains in weight of grit were found on the cotton at each dressing. The operation lasted one hour and a half. Shock was marked. Brandy was given by the rectum, and the patient was put to bed with hot bottles to keep up warmth. The evening temperature was 104° , pulse 145; but the next morning the temperature was 99° and the pulse 120. The following table shows the records of the temperature, pulse, urine, and pus:

TABLE SHOWING THE VARIATIONS IN TEMPERATURE, PULSE, URINE, AND PUS.

DATE.	Temperature.	Pulse.	Urine.	Pus.
1884.				
August 11.....	Evening, 7 P. M., $104\frac{1}{2}^{\circ}$	140	The urine was not measured until August 16.	
" 12....	Morning, 99°	120		
" 12....	Evening, 99°	100		
" 13....	Morning, 99°	95		
" 13....	Evening, 101°	90		
" 14....	Morning, $99\frac{1}{2}^{\circ}$	90		
" 14....	Evening, 101°	95		
" 15....	Morning, $99\frac{1}{2}^{\circ}$	95		
" 15....	Evening, 100°	90		
" 16....	Morning, 99°	85	Ounces.	Ounces.
" 16....	Evening, 100°	90	24	4
" 17....	Morning, 99°	85	28	$4\frac{1}{2}$
" 17....	Evening, 101°	90		
" 18....	Morning, normal.....	85	24	$\frac{1}{2}$
" 18....	Evening, 99°	85		
" 19....	Morning, normal.....	85	14^2	2
" 19....	Evening, 99°	85		
" 20....	Morning, 99°	85	20	3
" 20....	Evening, 99°	90		
" 21....	Morning, —.....	90	20	3
" 21....	Evening, 100°	95		
" 22....	Morning, normal.....	85	32	4
" 22....	Evening, normal.....	90		
" 23....	Morning, $97\frac{1}{2}^{\circ}$	95	29	4
" 23....	Evening, 97°	90		
" 24....	Morning, normal.....	85	29	2
" 24....	Evening, normal.....	85		
" 25....	Morning, 97°	95	16	3
" 25....	Evening, $97\frac{1}{2}^{\circ}$	85		
" 26....	Morning, $97\frac{1}{2}^{\circ}$	85	32	3
" 26....	Evening, $97\frac{1}{2}^{\circ}$	85		
" 27....	Morning, $97\frac{1}{2}^{\circ}$	85	21	None.
" 27....	Evening, normal.....	95^1		

¹ Increased by stimulants.

² The day was sultry, and the patient perspired profusely.

TABLE SHOWING THE VARIATIONS IN TEMPERATURE, ETC.—(Continued.)

DATE.	Temperature.	Pulse.	Urine.	Pus.
1884.			Ounces.	Ounces.
August 28....	Morning, normal.....	85	29	4
	Evening, normal.....	85		
" 29....	Morning, normal.....	80	25	2
	Evening, normal.....	80		
" 30....	Morning, ———.....	85	28	1½
	Evening, ———.....	85		
" 31....	.....	..	32	2
September 1....	.....	..	28	1½
" 2....	.....	..	25	1½
" 3....	.....	..	25	1
" 4....	.....	..	33	1½
" 5....	.....	..	29	1½
" 6....	.....	..	29	1
" 7....	.....	..	25	1
" 8....	.....	..	29	½
" 9....	.....	..	32	½
" 10....	.....	..	33	½
" 11....	.....	..	33	None.
" 12....	.....	..	29	} Cloudy on standing.
" 13....	.....	..	21	
" 14....	.....	..	33	
" 15....	.....	..	30	
" 16....	.....	..	33	
" 17....	.....	..	31	
" 18....	.....	..	33	
" 19....	.....	..	33	
" 20....	.....	..	31	
" 21....	.....	..	33	
" 22....	.....	..	33	
" 23....	.....	..	34	
" 24....	.....	..	32	
" 25....	.....	..	31	
" 26....	.....	..	31	

The second day, the patient passed about six fluid ounces of urine by the urethra, but the dressings were drenched, and, after the sixteenth day, the urine and pus were regularly measured. The tube was removed the tenth day after the operation. The convalescence was slow but quite steady, and seven weeks after the operation the patient rode out, and the eighth week was walking, free from pain and in better health than for months before the operation, and constantly improving. There still remains a sinus which discharges about half an ounce of pus daily.

As to the merits of the operation, I am more than satisfied. The question was whether extirpation (nephrectomy) or simple incision and drainage (nephrotomy) should be the operation;

and I decided upon the latter for the following reasons: First, the far greater danger of primary nephrectomy, fifty per cent dying from the primary operation, according to Mr. Clement Lucas; second, the possibility that nephrotomy would secure the end desired; third, the fact that, in case of failure of nephrotomy, the chances of a successful nephrectomy would be markedly better. This procedure is strongly advised by Mr. Clement Lucas, on the ground that the subsequent removal of the shrunken kidney is far less dangerous, because of the smaller cavity left by the operation, all of his own six cases recovering. As to the loin or abdominal incisions, I should in any subsequent case prefer the loin, whether for the simple incision and drainage or for the extirpation of the organ, because—1. It does not open the peritonæum. 2. That by it room enough can be obtained for the removal of any growth by making, as advised by Billroth, in addition to the incision parallel to the quadratus lumborum muscle, a second incision parallel, at one centimetre's distance, to the crest of the ilium, and extending, if necessary, as far as the spermatic cord. With this incision there is no necessity of excising the last rib and incurring the risk of collapsed lung. 3. By reason of the position of the wound, drainage is favored. 4. There is, with the lumbar incision, no danger of the formation of bands within the abdomen, which may become the cause of intestinal obstruction, as has occurred where, after nephrectomy, the ureter has been stitched into the abdominal wound.¹

In sounding the kidney for stone, I think the fine aspirator needles are much easier to manipulate than a needle and forceps, being fine, light, and their large shoulder giving a good control of the needle without taking up much room in the wound, as is the case with a needle-holder. The incision should be through the parenchyma, and not through the pelvis; and, although the hæmorrhage is sharp when the kidney-substance is incised, it is easily arrested by sponge-pressure, and tearing to enlarge the wound will greatly lessen the danger from this source.

¹ Morris's discussion of Thornton's paper on "Nephrotomy and Nephrectomy." International Medical Congress. Copenhagen, 1884.



